AMENDMENTS TO THE CLAIMS

1.-6. **(Canceled)**

7. **(Original)** A method of treating, stabilizing or preventing a lower than desired total body weight or a lower than desired percentage of body fat in a mammal comprising:

selecting a mammal in need of treatment for having a lower than desired total body weight or a lower than desired percentage of body fat; and

administering to the mammal a compound that decreases Shp2 activity.

8. **(Original)** The method of Claim 7, wherein said compound decreases Shp2 activity in neurons of said mammal.

9. **(Original)** The method of Claim 8, wherein said compound decreases Shp2 activity in neurons of forebrain of said mammal.

10. **(Original)** The method of Claim 9, wherein said compound decreases Shp2 activity in neurons of hypothalamus of said mammal.

11. **(Original)** The method of Claim 7, wherein said compound decreases a level of Shp2 mRNA or protein, an activity of Shp2, a half-life of Shp2 mRNA or protein, or a binding of Shp2 to a leptin receptor.

12. **(Original)** The method of Claim 11, wherein said compound is a Shp2 antagonist.

13. **(Canceled)**

14. **(Original)** A screening method for determining a compound useful for treating, stabilizing, or preventing a lower than desired total body weight or a lower than desired percentage of body fat in a mammal, said method comprising

contacting a cell with said compound; and

measuring Shp2 activity in said cell in the presence and absence of the compound, wherein the compound is determined to treat, stabilize, or prevent a lower than desired total body weight or a lower than desired percentage of body fat if the compound decreases the level of Shp2 activity.

15.-25. **(Canceled)**

26. **(New)** A genetically modified mouse comprising a disrupted Shp2 gene, wherein said genetically modified mouse is homozygous for said disrupted Shp2 gene, and wherein said

genetically modified mouse exhibits an increased body weight in comparison to a mouse that does not have a disrupted Shp2 gene.

27. **(New)** The genetically modified mouse of Claim 26, wherein said Shp2 gene is disrupted in the forebrain of said mouse.

28. **(New)** The genetically modified mouse of Claim 26, wherein said mouse has an early onset obesity.

29. **(New)** The genetically modified mouse of Claim 26, wherein said mouse has a resistance to leptin.

30. **(New)** The genetically modified mouse of Claim 26, wherein Shp2 protein level is decreased by 50-70% in the forebrain of said mouse.

31. **(New)** The genetically modified mouse of Claim 26, wherein triglyceride levels are increase in the serum of said mouse.

32. **(New)** The genetically modified mouse of Claim 26, wherein said Shp2 gene is absent in the forebrain of said mouse.

33. **(New)** A method of screening compounds for preventing or ameliorating obesity, comprising:

(a) providing a genetically modified mouse comprising a disrupted Shp2 gene, wherein said genetically modified mouse is homozygous for said disrupted Shp2 gene, and wherein said genetically modified mouse exhibits accelerated increase of body weight;

(b) administering a test compound to said genetically modified mouse;

(c) determining the effect of said test compound on the body weight of said genetically modified mouse; and

(d) correlating a decrease in the body weight of said genetically modified mouse with an anti-obesity effect of said test compound.